

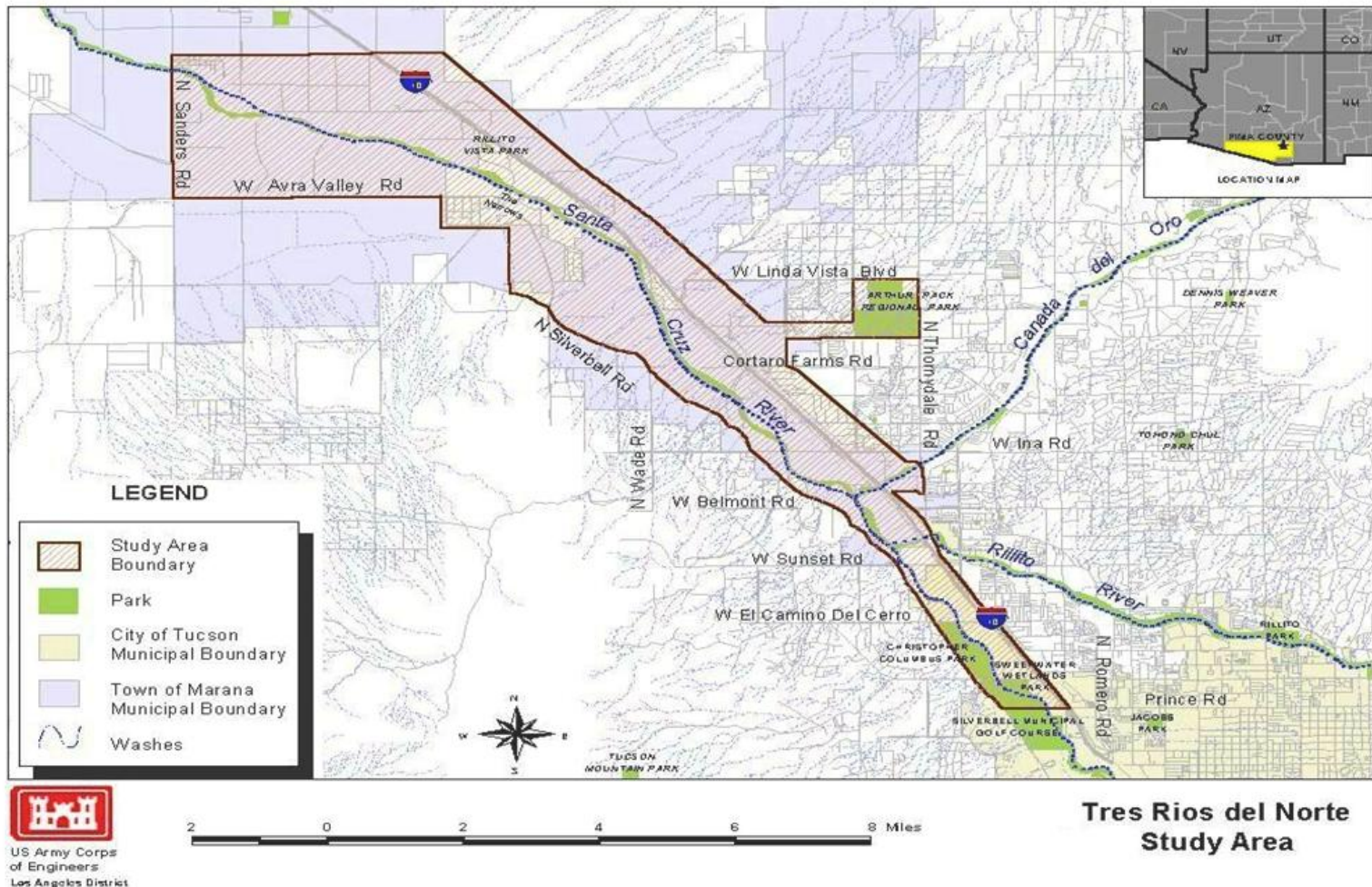
Tres Rios del Norte Feasibility Study

Santa Cruz River
Pima County, Arizona

February 2011



Study Area: 18 Miles of Santa Cruz River (Prince to Sanders) , portions of City of Tucson, Town of Marana, and unincorporated Pima County.



Tres Rios del Norte Feasibility Study

Study Purpose: Evaluate problems, opportunities and potential solutions, evaluate effects, and recommend a plan for implementation.

Focus: Ecosystem Restoration, Flood Risk Management, Water Supply (recharge), and Recreation.

Feasibility Report: Presents results and findings, compliance with applicable statutes and policies, provide decision makers and public a basis to judge recommended solutions.

Schedule: Draft Report for technical/policy review March 2011. Draft Report/DEIS for public review August 2011.

Identified Problems

- Degradation and loss of riparian habitat.
- Rapid growth and development.
- Loss of environmental values.
- Limited water availability.
- Groundwater overdraft.
- Limited recreation facilities.
- Bank instability at confluence area.



Study Components

Ecosystem Restoration: Restore riparian and adjacent habitats along river corridor.

Flood Risk Management: Evaluating flood and associated erosion risks throughout study area. Includes measures to stabilize river channel and banks.

Groundwater Recharge: Evaluating opportunities to provide constructed recharge within the study area. Draft plan being currently being finalized.

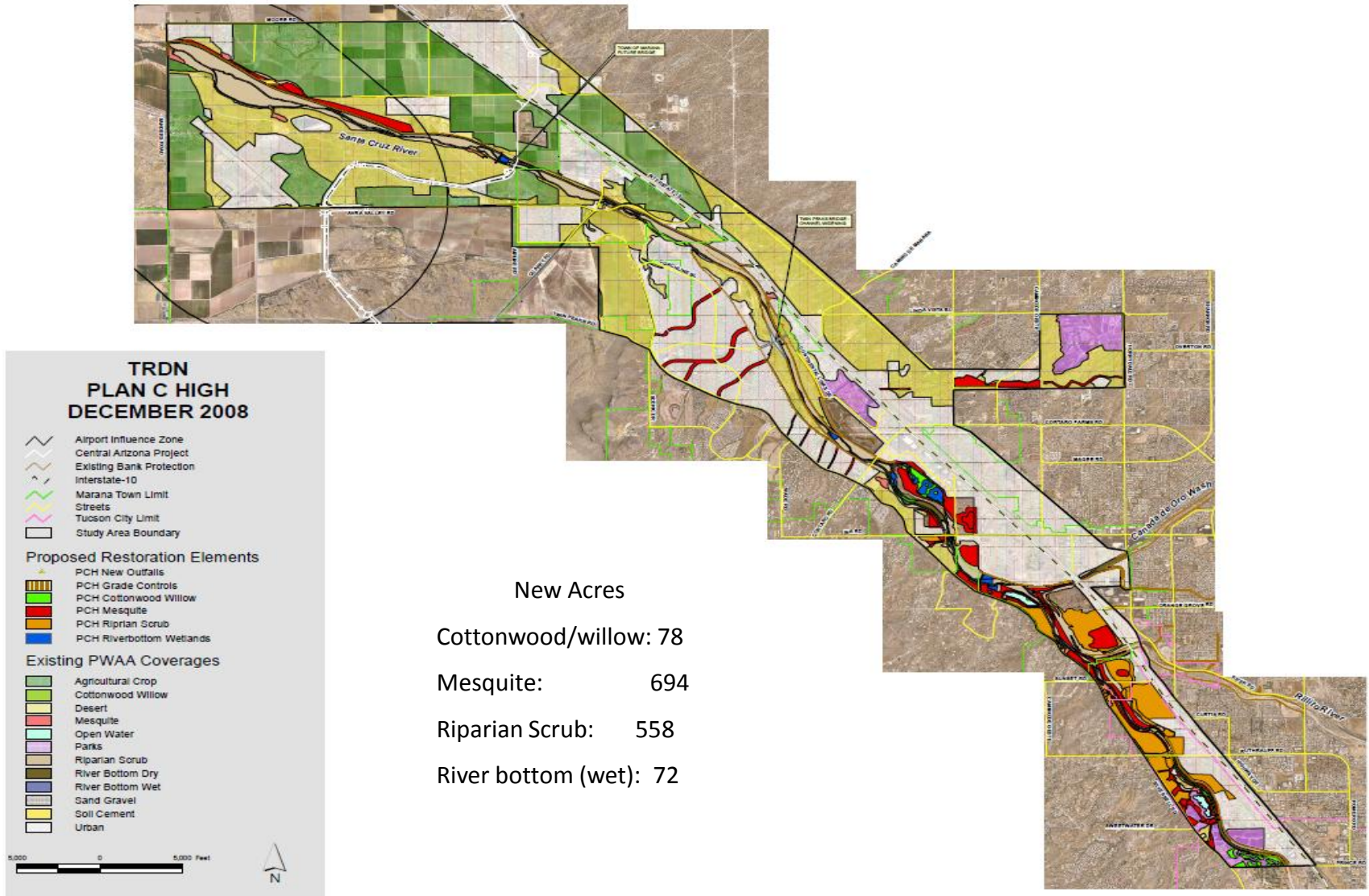
Recreation: Plan provides pedestrian and equestrian trail heads, crossings, interpretive signage and facilities. Links to other recreational facilities to provide opportunities for local and regional users.

National Ecosystem Restoration (NER) Plan

Plan that meets objectives and constraints, and reasonably maximizes environmental benefits while passing tests of cost effectiveness.

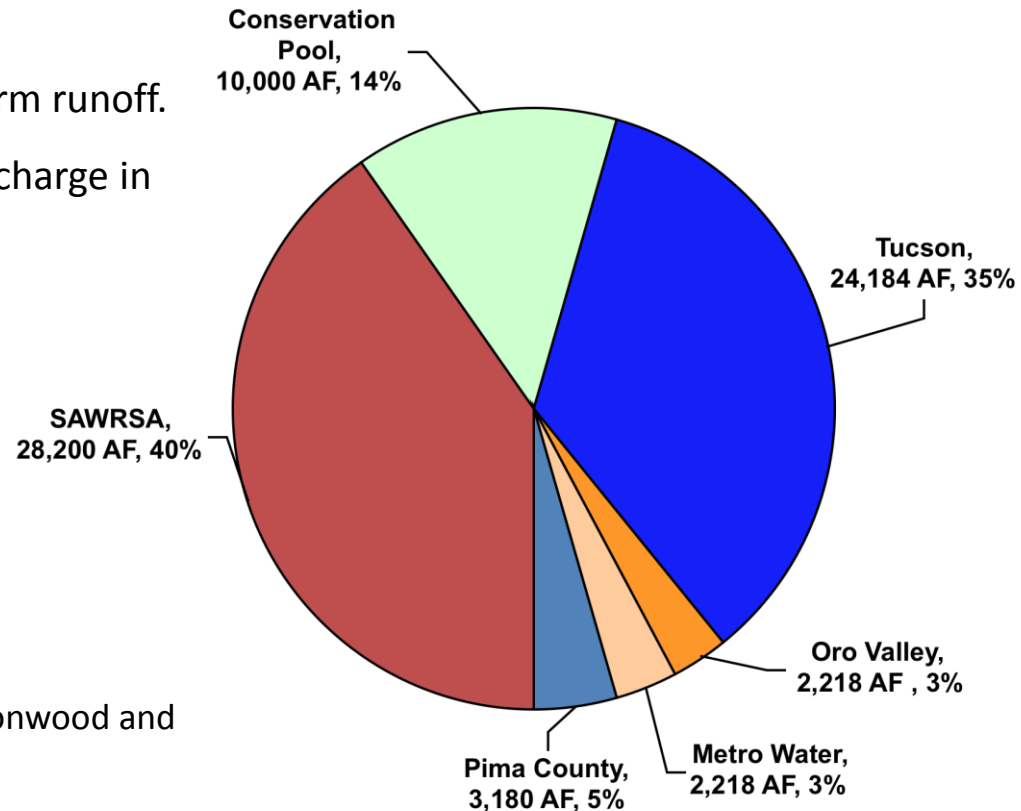
- Policy requires identification of NER Plan for comparison.
- Draft Report will compare NER Plan to other alternatives.
- Will undergo Public, Technical, and Policy Review.
- Plan may be refined based upon reviews.
- Non-Federal partners currently support Draft NER Plan.

Draft National Ecosystem Restoration Plan



Water Assumptions

- Future discharge to river significantly reduced.
- Estimate 26,980 AF to maintain Status Quo. Includes 25,430 AF in channel losses and 1,550 AF in consumptive use
- Multiple sources of project water, most likely sources identified in report.
- Restoration will be designed to utilize storm runoff.
- Evaluating opportunities for additional recharge in conjunction with restoration.



Restoration Plan Water Requirement (*approximate*)

8,800 AF/yr – 5 yrs. (plant establishment)

5,500 AF/year - after 5 yrs. (Support in-channel cottonwood and wetlands)

Groundwater Recharge

- Initial array of 15 constructed recharge measures.
 - T-berms
 - Multiple channels
 - Off-channel basins
 - Rubber dam
- Assume SAWRSA Effluent Recharged (USBR Collaboration).
- Benefits based on net increase in recharge compared to no action plan.
- Dollar value for benefits based on marginal cost of additional supply.*
 - \$305 acre foot CAGR Rate Schedule
- Possible to formulate combined Recharge/Restoration Plan.

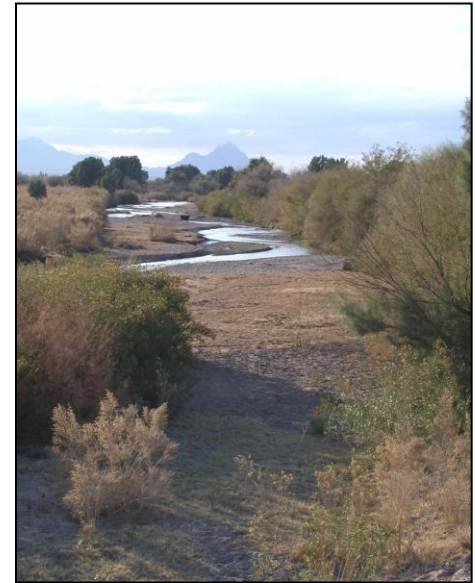
Recreation and Flood Risk Management

Recreation Plan - Pedestrian and equestrian trail heads, crossings, interpretive signage and facilities. Links to other recreational facilities to provide opportunities for local and regional users.

\$13,000,000, 50/50 Cost Shared

Flood Risks - Due to limited development in flood prone areas there was minimal reach-wide justification for structural measures. Focus on bank stability in confluence area.

6,500 feet of bank stabilization proposed. Included in Restoration costs.



Key Study Milestones

Milestone	Date
Initiate Study	09/2001
Public Scoping Meeting	10/2001
Feasibility Scoping Meeting (Problems and opportunities, forecast conditions)	07/2002
Alternative Review Conference (Range of alternative plans)	11/2003
Alternative Formulation Briefing (Comparison of plans, Draft plan)	06/2004
Draft Report (Public review of draft plan)	8/2011
Final Public Meeting (Presentation of NER Plan)	8/2011
Feasibility Review Conference (policy compliance review)	9/2011
Final Report	9/2011
Civil Works Review Board (Corps Headquarters Approval)	10/2011
Chief of Engineers Report (Recommendation)	2/2012
Design Agreement	2012
Congressional Project Authorization (Water Resource Development Act)	2012

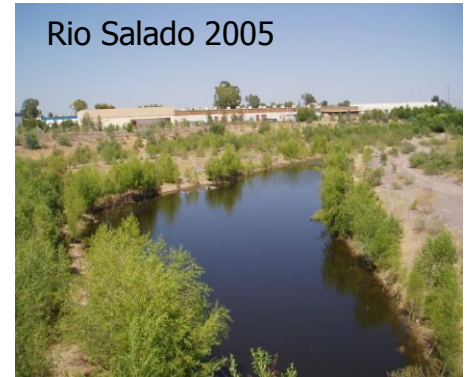
Long Term Goals

- Restore regionally, and nationally significant riparian habitat.
- Reduce risk of flood damages.
- Provide groundwater recharge opportunities.
- Increase local and regional recreation opportunities in conjunction with restoration.

Rio Salado 2003



Rio Salado 2005



Rio Salado 2007



- Questions

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